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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,652	03/02/2004	Hiroyuki Ogiso	9319S-000694	2704

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EXAMINER

NGUYEN, MINH T

ART UNIT PAPER NUMBER

2816

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SM

Office Action Summary	Application No. 10/791,652	Applicant(s) OGISO ET AL.	
	Examiner Minh Nguyen	Art Unit 2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6 and 8 is/are rejected.
- 7) ☒ Claim(s) 2,3 and 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/2/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. Figures 7-10 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings submitted on 8/5/04 are objected to because circuit blocks in Figs. 1-3 and 5-10 have missing lines. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after

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the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because (i) it is longer than 150 words, (ii) it is not complete, (iii) it uses words which can be implied, i.e., "is provided". Correction is required. See MPEP § 608.01(b).

Claim Objections

4. Claims 2-3 and 6 are objected to because of the following informalities:

In claim 2, line 7, "said resonance signal" should be changed to -- an amplified resonance signal -- because the signal output from an amplifier is not the same as the signal input to the amplifier,

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line 8, "an input of an output signal" should be changed to -- said amplified resonance signal --.

In claim 3, lines 7-8, the same problems exist as discussed in claim 2,

line 16, "the output signals" should be changed to --the branched output signals --.

In claim 6, line 4, "means" should be changed to -- portion --, see line 14 of claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,260,979, issued to Parker et al. in view of US Pat. 5,477,330, issued to Dorr.

As per claim 1, Parker discloses a clock shaping device (figure 1), provided in a transmission apparatus and compensating for network synchronization (this limitation is merely an intended use of the device, therefore, no patentable weight is given accordingly), for receiving an input of a back-up clock signal (REFCLK2) in sync with a reference clock signal from a master station and supplied from a clock supply apparatus and an input of reception data from a transmission path (where the clock signal REFCLK2 comes from is merely an intended use of the device, therefore, no patentable weight is given accordingly), and generating a reception

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clock signal (REFCLK1) through timing-extraction from said reception data, said device comprising:

a first clock signal selection portion (a portion of the MUX 12 which receives clock signals REFCLK1 and REFCLK2) that receives an input of said reception clock signal (REFCLK1) and an input of said back-up clock signal (REFCLK2), selects either of said clock signals by a first selection signal (REFCLK1_ACTIVE, REFCLK2_ACTIVE) inputted from outside (SELECTOR 14 is outside of the MUX 12), monitors, when said reception clock signal is being selected, a loss in said selected reception clock signal, and switches said selected reception clock signal to said back-up clock signal upon detection of said loss (the recited functions are explicitly disclosed in column 4, lines 49-58, i.e., the REFCLK1 clock signal is monitored. If the REFCLK1 is invalid, select the REFCLK2 clock signal);

an oscillation circuit (figure 4, RC oscillator 104) that oscillates at a predetermined frequency;

a second clock signal selection portion (the portion of the MUX 12 which receives one of the clock signals REFCLK1, REFCLK2 and the RC_CLK clock signal) that receives an input of a clock signal from said first clock signal selection portion (either the clock signal REFCLK1 or REFCLK2) and an input of a clock signal (RC_CLK) from said oscillation circuit (RC oscillator 104), selects either of said clock signals by a second selection signal (RC_CLK_ACTIVE) inputted from outside, monitors, when said back-up clock signal is being selected, a loss in said selected back-up clock signal, and switches said back-up clock signal to said clock signal from said oscillation circuit upon detection of said loss (the recited functions are explicitly disclosed in

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column 4, lines 56-60, i.e., if the clock signals REFCLK1 and REFCLK2 are invalid, select the RC_CLK clock signal);

a voltage controlled oscillation circuit (VCO 24) having a frequency that varies with a control voltage being supplied (this is a standard function of a VCO), and generates and outputs a feedback loop output signal (at node 26);

a phase comparison portion (PHASE DETECTOR 16) that generates a phase difference signal based on a result of comparing said feedback loop output signal from said voltage controlled oscillation circuit and a clock signal outputted from said second clock signal selection portion (as shown, REFCLK is compared with OSCOUT); and

a loop filter (LOOP FILTER 22) that smoothes said phase difference signal and outputs said phase difference signal in the form of said control voltage.

Parker does not explicitly disclose the oscillation circuit 104 is a quartz crystal oscillator as called for in the claim.

Dorr explicitly discloses in the abstract that an oscillator circuit implemented using quartz crystal would provide highly accurate and stable frequency signal.

It would have been obvious to one skilled in the art at the time of the invention was made to replace the Parker's RC oscillator by a quartz crystal oscillator circuit for the advantage discussed herein above.

As per claim 4, Parker further discloses:

a first selection portion (figure 1, a portion of MUX 12 which receives REFCLK1 and REFCLK2) that receives an input of said reception clock signal and an input of said back-up clock signal, and selects and outputs either of said clock signals by said first selection signal;

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a reception clock signal loss detection portion (figure 4, VALID REFCLK1 DETECTOR 98) that detects a loss in said reception clock signal when said reception clock signal is being selected in said first selection portion, and outputs said detection to said first selection portion in the form of a first switching signal (REFCLK1_FAIL), and

wherein said first clock signal selection portion switches said reception clock signal to said back-up clock signal by said first switching signal given with precedence over said first selection signal (column 4, lines 49-58).

As per claim 5, Parker further discloses:

a second selection portion (figure 1, a portion of MUX 12 which receives REFCLK2 and RC_CLK) that receives an input of a clock signal outputted from said first clock signal selection portion and an input of a clock signal outputted from said quartz crystal oscillation circuit, and selects and outputs either of said clock signals by said second selection signal; and

a back-up clock signal loss detection portion (figure 4, VALID REFCLK2 DETECTOR 102) that detects a loss in said back-up clock signal when said back-up clock signal is being selected in said second selection portion, and outputs said detection to said second selection portion in the form of a second switching signal (REFCLK2_FAIL), and

wherein said second clock signal selection portion switches said back-up clock signal to said clock signal from said quartz crystal oscillation circuit by said second switching signal given with precedence over said second selection signal (column 4, lines 56-60).

As per claim 6, Parker discloses a device having the structure discussed in claim 1 but he does not explicitly disclose first and second dividing means connected as recited in the claim.

The examiner takes Official Notice the fact that the practice of dividing the frequency of the reference signal and dividing the frequency of the feedback signal in a PLL circuit to reduce the frequency of these operating signals is well-known.

It would have been obvious to one skilled in the art at the time of the invention was made to insert first and second dividing means to the Parker's PLL circuit to reduce the frequency of the reference signal and the frequency of the feedback signal. The motivation and/or suggestion would be to allow the Parker's PLL to be able to function in applications which operate with very high frequency signals.

As per claim 8, this claim is rejected for the same reasons and motivation discussed in claim 1. The recited limitation "electronic instrument" is met because the Parker's PLL circuit is obviously used to provide clock for an electronic instrument.

Allowable Subject Matter

6. Claims 2-3 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 2 and 7 are allowable because the prior art of record fails to disclose or suggest the inclusion of a phase-shift circuit, SAW resonator, amplifier and buffer in the VCO circuit as recited in claim 2.


Claim 3 is allowable for the same reason noted in claim 2.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Nguyen whose telephone number is **571-272-1748**. The examiner can normally be reached on Monday, Tuesday, Thursday, Friday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 4/28/05

Minh Nguyen
Primary Examiner
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